Ultra Short-throw Projectors <LV-WX300UST >

■Outline of product

This new ultra short-throw projector belongs to a class of DLP portable projectors that can be used in a wide variety of scenarios including academic institutions.

■Product specifications (Specifications and appearance may change without prior notice for reasons such as manufacturing and changes of components.)

Used power	AC100 - 240 V 50Hz/60Hz
Consumed power	Standard：300W / Quiet：240W (Lamp modes are Full Power and Power Saver.) Standby (Network/RS232): 6.0W/0.5W
Picture element	0.65-type DMD device (aspect ratio 16：10) 1280 dots x 800 dots, WXGA
Projection lens	Installation distance range：28.2 - 44.6 cm, 100-inch installation distance：44.6 cm, Zoom ratio: Fixed, Projection Ratio: 0.35 (a calculated value for 87-inch display)
Light source lamp	Ultra-high pressure mercury lamp
Output using light source	230 W / 200 W (Lamp modes are Full Power and Power Saver. Brightness figure is a calculated value and not guaranteed when the lamp mode is in eco mode.)
Projected image size	80-inch to 100-inch (Image with the same aspect ratio as that of DMD)
Light output*	Standard: 3000lm/Quiet: 2500lm (TBD) (Brightness figure when the lamp mode is in normal/eco or eco mode is calculated value thus not guaranteed
Peripheral contrast*	80%
Contrast ratio*	2300：1 (TBD)
Input signal resolution	UXGA to VGA
Corresponding scanning frequency	See List of supported signals
Lens shift	75%, fixed
Keystone correction range	V ±40°
Video signal	Analog PC input: UXGA/SXGA+/ WXGA/SXGA/XGA/SVGA/VGA/MAC Digital PC input: UXGA/SXGA+/ WXGA/SXGA/XGA/SVGA/VGA HDMI input: 1080p/1080i/720p/576p/480p Component video input: 1080p/1080i/720p/576p/576i/480p/480i Video input (Composite, S-Video): NTSC/PAL/SECAM/NTSC4.43/PAL-M/PAL-N/PAL-60
Connection terminal	Mini D-sub 15 x 2: Analog PC/Component video input HDMI x 2: Digital PC/Digital video input Mini DIN4: S-video input RCA: Video input 2RCA: Audio input Mini jack x 2: Audio input x 1, Audio output x 1 Dsub9: RS-232 connection RJ-45: Network connection (100BASE-TX / 10BASE-T) USB type B: USB connection (USB2.0 compatible)
Adjustable feet	Front: 1, Rear: 2 (Max. angle 2 °)
Built-in speaker	10 W x 2, Stereo
Noise level	33 dB / 29 dB (Lamp modes are Full Power and Power Saver.)
Cabinet	Molded plastic
External dimensions	Width 287.5 x Height 160 x Depth 374.5 mm (excluding protrusions) Width 287.5 x Height 122.6 x Depth 374.5 mm (including protrusions)
Weight	About 5 kg
Environmental conditions	Usage environment: 5 °C to 40 °C
Supplied remote control	Operation distance (for wireless): About 8m (receiver front ±30°)

* This indicates the overall average value of the product at the time of shipping, and it is listed in accordance with pattern for data projectors JIS X 6911:2003. The measurement method and measurement conditions are based on the Annex.

Note: This is the average. It may vary for each product.

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■ Key features

- **WXGA-3000 lm and contrast ratio of 2300:1**

This projector is a WXGA model capable of providing light output of 3,000 lumens, which is bright for a projector in portable class. Its contrast ratio is 2300:1 to project sharp images.

- **Ultra short-throw projector that enables close-in projection onto a screen or wall**

This projector is an ultra short-throw model that realizes projection ratio of 0.35:1.
In order to project a 100-inch image on the wall, distance from the screen to projector is only 45cm.

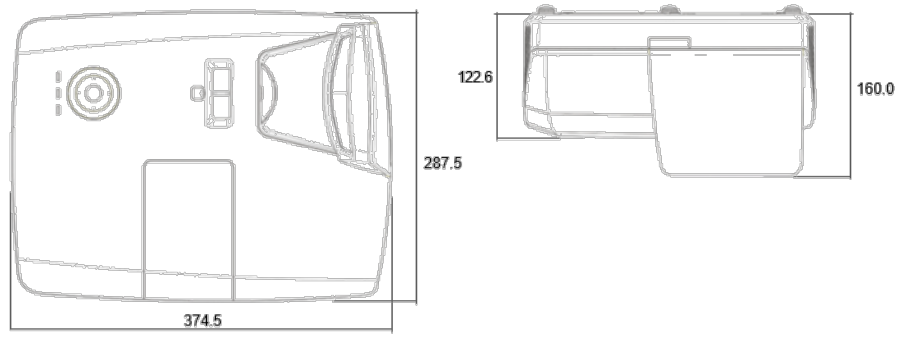
- **Two HDMI terminals**

The projector is equipped with 2 HDMI terminals to support input of high-resolution digital videos. Connect with devices such as Blu-ray disc player to project high-resolution videos.

■ External dimensions diagram

(Unit: mm)

LV-WX300UST



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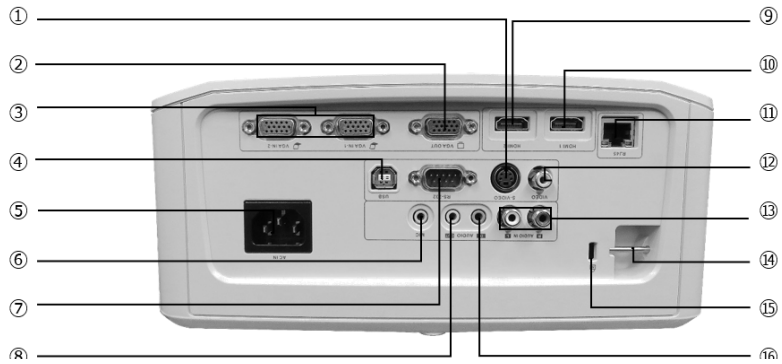
■ Terminals



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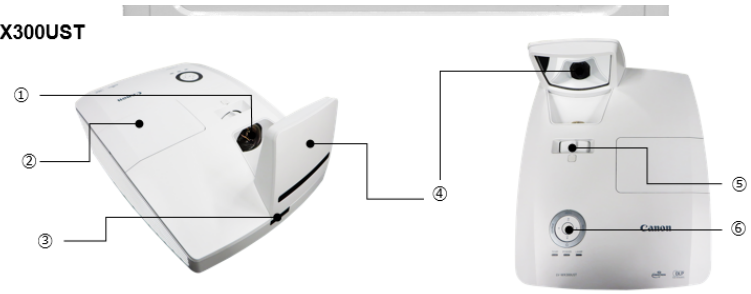

[Common terminals]

① S-Video

② VGA out

③ VGA1, VGA2

④ USB

⑤ AC

⑥ Mic

⑦ RS-232

⑧ Audio out

⑨ HDMI 2

⑩ HDMI 1

⑪ RJ-45

⑫ Video

⑬ Audio L/R
(for Video and S-Video)

⑭ Security bar

⑮ Kensington lock

⑯ Audio in

[Common Names]

① Lens

② Lens cover

③ IR receiver

④ Aspheric mirror

⑤ Focus ring

⑥ Function keys

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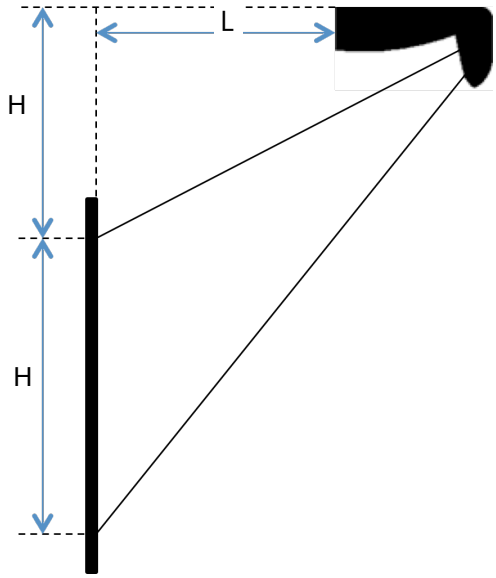
■ Installation distance and image size

Projection lens for this projector doe not feature optical zoom function.
For this reason, image size is adjusted by moving the installation position (throw distance).



"L" in the diagram (left) represents throw distance. It is the horizontal distance from the front of the projector to the screen.

H represents the image height; it is the vertical distance from the top to the bottom of the image.

Hs is the distance in vertical direction from the bottom of the projector to the top of the image.

Ratio between H and Hs for this projector is fixed, as shown below:

LV-WX300UST
10:2.5 (Hs = H x 0.25)

Although it is not shown in this diagram, the width of the image is indicated with W.

Note: Although this projector can be used in a conventional position (placed on a desktop), it is designed to be mounted on a wall up-side-down, using a bracket.

Optimum displayable images sizes are between 80 to 100 inches.
Image size and throw distance are as indicated below.

(Unit: m)

Image size (16:10)			Installation distance	Throw distance	Projection ratio
Type	W [cm]	H [cm]	L [cm]	L' [cm]	L'/W
80	172	108	28.2	60.2	0.350
85	183	114	32.3	64.3	0.351
90	193	121	36.4	68.4	0.353
95	204	128	40.5	72.5	0.354
100	215	135	44.6	76.6	0.355

Note: Figures in the above chart are approximate.

This projector adopts aspheric mirror for its optical system. For this reason, there is a gap between installation distance and projection distance as shown in the diagram on the right. The difference is expressed with the following formula.

L' = L + 32.0

Projection ratio is calculated with the above formula using throw distance, not installation distance.

Projection ratio is not proportional to the throw distance because the image size at the starting point for throw distance is not zero.

This projector features 3 adjustable feet.
Feet are used to adjust left/right tilt.
The projection angle can be adjusted up to 2.0 degrees between the projector and installation surface.

■List of supported signals

The video signals that can be input in this product are described in the table below.

Video signal input is accepted in the following ranges: Horizontal scanning frequency between 15 KHz and 75 KHz, and vertical scanning frequency between 50Hz and 60Hz.

●Digital (DVI/HDMI) /Analog PC (RGB)

Signal format	Horizontal frequency [KHz]	Vertical frequency [Hz]
720x400	37.9	85.04
640x480	31.5	60.0
	37.9	72.8
	37.5	75.0
	43.3	85.0
800x600	35.2	56.3
	37.9*1	60.3*1
	48.1	72.2
	53.7	72.2
	76.3*2	120.0*2
1024x576	35.8	60.0
1024x600	37.3	60.0
	41.5	65.0
1024x768	48.4*1	60.0*1
	56.5	70.1
	60.0	75.0
	68.7	85.0
	97.6*2	120.0*2
	99.0	120.0
1152x864	67.5	75.0
1280x720*1	45.0	60.0
	90.0	120.0
1280x768	47.4	60.0
	47.8*1	59.9*1
1280x800	49.7*1	59.8*1
	62.8	74.9
	71.6	84.9
	101.6*2	119.9*2
1280x1024	64.0*3	60.0*3
	80.0	75.0
	91.1	85.0
1280x960	60.0*3	60.0*3
	85.9	85.0
1280x1470*4	-	60.0
1366x768*3	47.7	60.0
1400x1050*3	65.3	60.0
1440x900	55.5	59.9
	55.9*3	59.9
	70.6	75.0
1600x1200	75.0	60.0
1680x1050	64.7	59.9
	65.3	60.0
1920x1200	74.0	60.0
1920x1080	67.5	60.0
1920×2205*4	-	23.97

●Apple Macintosh (analog/digital)

Signal format	Horizontal frequency [KHz]	Vertical frequency [Hz]
640x480	35.0	66.7
832x624	49.7	74.5
1024x768	60.2	74.9
1152x870	68.7	75.1

●Digital video /Component video

Signal format	Horizontal frequency [KHz]	Vertical frequency [Hz]
480i	15.734	60.0
480p	31.5	60.0
576i	15.625	50.0
576p	31.3	50.0
720p	37.5	50.0
	45.0	60.0
1080i	33.8	60.0
	28.1	50.0
1080p	27.0	24.0
	28.0	25.0
	33.7	30.0
	67.5	60.0
	56.3	50.0

●Composite video

NTSC	15.734	60.0
PAL.SECAM	15.625	50.0

＜Notes on 3D＞

*1 Supports non-3D and 3D signal with Frame Sequential and Top-Bottom format.

*2 Supports non-3D and 3D signal with Frame Sequential format

*3 Supports non-3D and 3D signal with Top-Bottom format.

*4 Supports 3D signal with Frame Packing format.

There 3D timing showing depend the EDID file and display card. It is possible that user cannot choose the above 3D timings on display card.

The resolution of the panel is 1280 x 800. Resolution other than native resolution may display with uneven size of text or lines.

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■Accessories

Supplied (common)	Projector Remote Controller (with battery) LV-RC10	Power source: DC 3.0V (uses CR2025 battery) Operating range: Distance of approx. 8m from the projector; angle of±30° in any direction from directly in front of the infrared remote receiver.
	Computer Cable	Mini Dsub15-MiniDsub15 Used to connect the projector to a PC for transferring analog PC signals.
	AC Power Cord	Connects the projector to the power plug
Options	Projector Remote Controller (with battery) LV-RC10 Projector Remote Controller (with battery) LV-RC9	Same as the supplied accessory.
	Wall-mounting Bracket LV-WL02	Used to hang the projector from the wall
Replacement parts	Replacement Lamp	Ultra high-pressure mercury lamp Recommended replacement time*1: 5000H/8000H (Lamp mode: Full Power and Power Saver.)

*1: When the lamp has a 50% survival rate and can maintain a 50% light retention ratio. This figure does not guarantee the lamp life.

■Precautions when installing/using

High wattage lamps are used in the projector, and it becomes very hot. Take care as follows.

① This projector produces intense light from the projection lens. Do not stare directly into the lens, otherwise damage to eyes could result.

② Do not set anything on top of the projector. Also do not project with projectors stacked directly on top of each other.

③ Do not place any object in front of the lens while the projector is in use as focused light projected to an object for a prolonged time may result in a fire.

④ Do not block the intake and exhaust vents of the projector.
Also, install the projector so that the intake and exhaust vents are not subjected directly to warm air and cold air of air conditioning.

⑤ The projector uses high-pressure mercury lamp for its light source, which may deteriorate or reduce luminance owing to the characteristics and extensive use of the mercury lamp. Prolonged usage may also lead to breakage of the lamp. In such instances, immediately replace the lamp to a new lamp. Contact a local dealer for service and replacement of the lamp; such maintenance should be conducted at a service center by a qualified personnel.

⑥ When operating the projector inserted in a box, ensure that the ambient temperature within the box during operation is within the range of 0° C to 40° C. Also, do not block the intake and exhaust vents. Even when the ambient temperature is 40° C or lower, the protection circuit of the projector may function and shut down the projector due to internal retention of the exhaust heat. Sufficiently consider the ambient temperature environment when installing the projector.

⑦ Set the Fan Control mode (High altitude mode) to ON when using the projector in high altitudes (1,500 meters or move above sea level) where the atmospheric pressure is low.

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